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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/612,140

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Keiji Miyazaki

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EXAMINER

MABINI, MARVIN

ART UNIT

PAPER NUMBER

2191

DATE MAILED: 08/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/612,140

Applicant(s)

MIYAZAKI ET AL.

Examiner

Marvin Mabini

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– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 20030702.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3,6,10-13,16, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 5799153 to Blau et al (hereinafter Blau).

Claims 1-3,6,10-13,16, and 20

As per claims 1 and 11, Blau discloses a network management system for managing networks (see management – Blau column 2 line 29), comprising: network devices composing the networks (see Blau figure 13 block 1328); management systems for managing device information of said network devices (see Blau figure 1 block 102); a subnetwork manager (see Internal Network Node – Blau column 13 lines 5-10) for dividing device subnetwork of a connecting device (see network partitioning - Blau column 14 lines 20-23) which belongs to plural networks to be managed (see

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subnetworks – Blau column 13 lines 40-41), into divided subnetworks (see network partitioning – Blau column 14 lines 20-23) corresponding to the plural networks for management when collecting and managing subnetwork information out of device information as device subnetworks in the plural networks connected to each other (see managed object instance – Blau column 13 lines 54-57); and a user interface for controlling the display of the device subnetworks and divided subnetworks (see management view – Blau column 4 lines 63-64).

As per claims 2 and 12, Blau discloses said subnetwork manager sets identifiers (see manage object instance– Blau column 13 line 46) so as to recognize the correspondence among the device subnetwork and the divided subnetworks (see “subnetwork and the network elements” – Blau column 13 lines 49-54).

As per claims 3 and 13, Blau discloses the network management system according to claim 1, wherein said subnetwork manager registers connection termination points for the corresponding divided subnetwork (see termination point – Blau column 13 lines 15-18), while registering trail termination points for all the divided subnetworks after giving each of the trail termination points an identifier (see object class – Blau column 13 line 20) so as to recognize which network is using the trail termination point (see pools of termination points – Blau column 13 lines 21-25).

As per claims 6 and 16, Blau discloses said subnetwork manager sets identifiers (see manage object instance— Blau column 13 line 46) so as to recognize the correspondence among the device subnetwork connection and divided subnetwork connections (see “subnetwork and the network elements” – Blau column 13 lines 49-54), the device subnetwork connection describing the connectivity in the device subnetwork (see subnetwork is represented – Blau column 13 lines 46-49), the divided subnetwork connections describing the connectivity in the divided subnetworks (see named binding relations – Blau column 13 lines 49-54)

As per claims 10 and 20, Blau discloses when trouble occurs on the networks, said subnetwork manager detects a link connection corresponding to a line in trouble (see fault detecting and alarm – Blau column 17 lines 57-60) from link connections created when the divided subnetworks were created (see links non-available – Blau column 18 lines 24-28), and said user interface displays a warning for the detected link connection (see receive alarm – Blau column 18 lines 35-41).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4, 7, 9, 14, 17, 19 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5799153 to Blau et al (hereinafter Blau) in view of US Patent 6233221 to Lowe et al (hereinafter Lowe).

As per claims 4 and 14, Blau discloses all the limitations of claim 4 (see 102 rejection of claims 1 and 11 from which claims 4 and 14 depends respectively).

Blau does not disclose expressly that subnetwork manager creates virtual link ends and link to connect the divided subnetworks.

The general concept of creating virtual links in order to connect networks is well known in the art as illustrated by Lowe which teaches that subnetwork manager creates virtual link ends and link to connect the divided subnetworks (see virtual connections between endpoints – Lowe column 3 line 65-66).

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the system of Blau with a subnetwork manager that creates virtual link ends and link to connect the divided subnetworks as taught by Lowe.

The motivation would be to allow better use of bandwidth in a broadband network so to prevent a single point of failure from bringing down the network (see Lowe column 1 lines 33-35 and 44-46). Therefore it would have been obvious to combine Lowe with Blau to obtain the invention as specified in claims 4 and 14.

As per claims 7 and 17, Blau discloses all the limitations of claim 9 (see 102 rejection of claims 1 and 11 from which claims 7 and 17 depends respectively).

Blau does not disclose expressly when divided subnetwork connections are created, said subnetwork manager finds actually-used termination points from virtual termination points, replaces the found virtual termination points with real termination points, and maps the subnetwork connection of which the both ends are the real termination points, to the device subnetwork.

The general concept of mapping virtual points to an address associated with a physical point is well known in the art as illustrated by Lowe which teaches when divided subnetwork connections are created, said subnetwork manager finds actually-used termination points from virtual termination points (see access interface provides traffic endpoints – Lowe column 4 line 20-21), replaces the found virtual termination points with real termination points (see ring interface module, RIM , and virtual connection ring– Lowe column 4 lines 43-46), and maps the subnetwork connection of which the both ends are the real termination points, to the device subnetwork (see RIM includes switch fabric, and switch fabric is coupled to first bus– Lowe column 4 line 46-51).

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the system of Blau with when divided subnetwork connections are created, said subnetwork manager finds actually-used termination points from virtual termination points, replaces the found virtual termination points with real termination

points, and maps the subnetwork connection of which the both ends are the real termination points, to the device subnetwork taught by Lowe.

The motivation to do so would be to add the functionality virtual connection, which can interconnected with other ring networks without interfering with the operation of the other ring networks (see Lowe column 1 lines 56-58). Therefore it would have been obvious to combine Lowe with Blau to obtain the invention as specified in claims 7 and 17.

As per claims 9 and 19, Blau discloses all the limitations of claim 9 (see 102 rejection of claims 1 and 11 from which claims 9 and 19 depends).

Blau does not disclose expressly when creating the divided subnetworks or when creating divided subnetwork connections, said subnetwork manager creates virtual connection termination points and link connections.

The general concept of creating virtual connections termination points and link connection in order to establish beginning and terminating points is well known in the art as illustrated by Lowe which teaches when creating the divided subnetworks or when creating divided subnetwork connections (see ring segments – Lowe column 3 line 55), said subnetwork manager creates virtual connection termination points and link connections (see traffic originating endpoint and traffic terminating endpoint – Lowe column 3 line 66-67 and column 4 line 1-4).

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the system of Blau with when creating the divided subnetworks or

when creating divided subnetwork connections, said subnetwork manager creates virtual connection termination points and link connections as taught by Lowe.

The motivation would be to provide an interconnect with other ring networks without interfering with the operation of the other ring networks (see Lowe column 1 lines 56-58). Therefore it would have been obvious to combine Lowe with Blau to obtain the invention as specified in claims 9 and 19.

As per claim 21, Blau discloses a network management method for managing networks (see management – Blau column 2 line 29) comprising the steps of: dividing the device subnetwork of a connecting device (see network partitioning - Blau column 14 lines 20-23) which belongs to plural networks (see subnetworks – Blau column 13 lines 40-41), into divided subnetworks (see network partitioning – Blau column 14 lines 20-23) corresponding to the plural networks when receiving and managing the subnetworks of devices as device subnetworks in the plural networks connected to each other (see managed object instance – Blau column 13 lines 54-57); registering identifiers (see manage object instance– Blau column 13 line 46) so as to recognize the correspondence between the device subnetworks before and after division (see “subnetwork and the network elements” – Blau column 13 lines 49-54); registering connection termination points for the corresponding divided subnetworks (see termination point – Blau column 13 lines 15-18); registering trail termination points with identifiers (see object class – Blau column 13 line 20) for all the divided subnetworks so as to recognize which network is using the points (see pools of termination points – Blau

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column 13 lines 21-25) and registering and managing the divided subnetworks (see subnetwork – Blau column 13 line 38-40; registering and managing is interpreted as including subnetworks in the management system).

Blau does not disclose expressly creating virtual link ends and a virtual link between the link ends to connect the divided subnetworks;

The general concept of creating virtual links in order to connect networks is well known in the art as illustrated by Lowe which teaches creating virtual link ends and a virtual link between the link ends to connect the divided subnetworks (see virtual connections between endpoints – Lowe column 3 line 65-66).

The motivation would be to allow better use of bandwidth in a broadband network so to prevent a single point of failure from bringing down the network (see Lowe column 1 lines 33-35 and 44-46). Therefore it would have been obvious to combine Lowe with Blau to obtain the invention as specified in claim 21.

6. Claims 5, 8, 15, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5799153 to Blau et al (hereinafter Blau) in view of US Patent 6226111 to Chang et al (hereinafter Chang).

As per claims 5 and 15, Blau teaches all the limitations of claim 5 (see 102 rejection of claims 1 and 11 from which claims 5 and 15 depends).

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Blau discloses, in order to cancel the division of the divided subnetworks in response to an external command (see subnetwork not being able to be partitioned further – Blau column 16 line 56-59), said subnetwork manager registers the connection termination points of the divided subnetworks for the device subnetwork (see terminal points and reconfiguration – Blau column 17 lines 21-24), registers the trail termination points for the device subnetwork, avoiding overlaps (see termination point – Blau column 17 lines 26-30).

Blau does not disclose expressly deleting the link and link ends connecting the divided subnetworks.

The concept of deleting links to drop connections within a network is well known in the art as illustrated by Chang, which teaches deleting the link, and link ends connecting the divided subnetworks (see cross connect which includes multiple rings Chang column 17 lines 49-58; also see add/drop lines – Chang column 18 lines 40-47).

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the system of Blau with deleting the link and link ends connecting the divided subnetworks as taught by Chang.

The motivation to do so would be to divert resources when there are failures in certain links of the network. Therefore it would have been obvious to combine Chang with Blau to obtain the invention as specified in claims 5 and 15.

As per claims 8 and 18, Blau teaches all the limitations of claim 8 (see 102 rejection of claims 1 and 11 from which claims 8 and 18 depends).

Blau does not disclose expressly in order to delete divided subnetwork connections, said subnetwork manager gives each of the divided subnetwork connections a deletion flag, and performs the deletion processing when all the divided subnetwork connections have the deletion flags.

The concept of deleting/dropping connections or links in a network by providing a flag is well known in the art as illustrated by Chang, which teaches in order to delete divided subnetwork connections, said subnetwork manager gives each of the divided subnetwork connections a deletion flag (see add/drop lines - Chang column 18 lines 40-44), and performs the deletion processing when all the divided subnetwork connections have the deletion flags (see add/drop lines – Chang column 18 lines 40-47).

At the time of the invention it would have been obvious to one of ordinary skill in the art to modify the system of Blau with in order to delete divided subnetwork connections, said subnetwork manager gives each of the divided subnetwork connections a deletion flag, and performs the deletion processing when all the divided subnetwork connections have the deletion flags, taught by Chang.

The motivation to do so would be to reduce the complexity of the interconnect by eliminating those inputs and outputs not needing to be interconnected (see Chang column 9 lines 18-21). Therefore it would have been obvious to combine Chang with Blau to obtain the invention as specified in claims 8 and 18.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Japanese publication 07-154410 to NEC Corp, teaches managing a SONET/SDH ring subnetwork.

Japanese publication 05-022405 to NEC Corp, teaches network management system that shows relations between physical network and the logical network.

US Patent 5031211 to Nagai et al, teaches a communication system including subnetworks, each of these networks having a management system.

US Patent 5204955 to Kagei et al, teaches a network including an integrated management system for the network as a whole as well as management systems for individual parts of the network.

US Patent 5623357 to Kight et al, teaches demarcation and monitoring networks.

US Patent 5634011 to Auerbach et al, teaches a distributed network management where each cluster has its own set manager that sets membership in the cluster.

US Patent 5566162 to Gruber et al, teaches a network that can be sectionalized to determine location of a fault.

US Patent 5815490 to Lu, teaches managing SDH rings that partition and distribute the network management functions.

US Patent 5903370 to Johnson, teaches a ring network that involves restoring failed communication links in a communication network.

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US Patent 6968371 to Srinivasan, teaches a network management system that is design to manage a plurality of network elements.

US Patent 6389015 to Huang et al, teaches managing a SONET ring and reconfiguring inter-ring routing by moving circuits from one inter-ring path to another.

US Patent 6654341 to Chi et al, teaches connecting ring networks with a second ring network.

US Publication 2002/0048066 to Antoniades et al, teaches an optical cross connect that can be expandable.

Perlman, R, "Hierarchical networks and the subnetwork partition problem", Computer Netowrks and ISDN Systems, April 1985 vol. 9, no. 5, p. 297-303, teaches networks that are partitions and detecting networks that are partitioned.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marvin Mabini whose telephone number is 571-270-1142. The examiner can normally be reached on Monday-Friday 9AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz F. Jules can be reached on 571-272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MM/

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